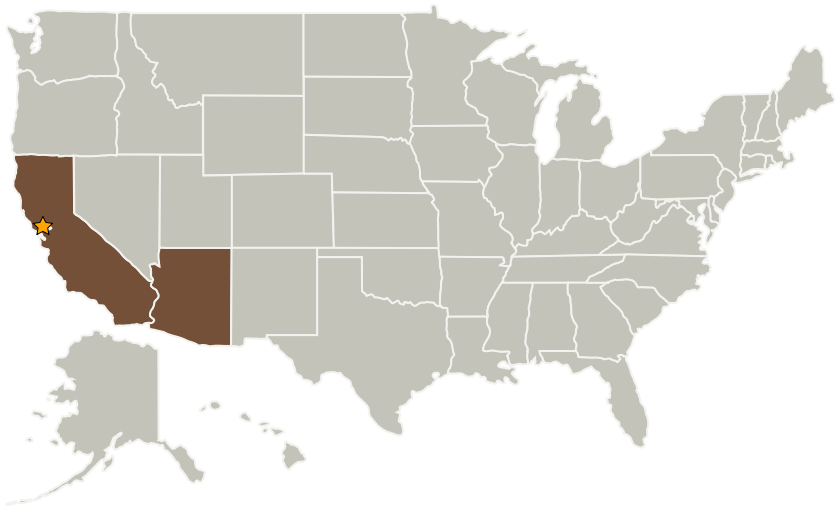
Integrated System Management and Reconfigurable Control, Phase I

Completed Technology Project (2007 - 2008)

Project Introduction

The team proposes to develop an onboard, real-time health management capability that monitors a flight control system (for spacecraft, fixed or rotary wing aircraft) in a highly dynamic environment and responds to anomalies with suggested recovery or mitigation actions. The goal of the proposed capability is to take system/component level health status information and aggregate this information across all channels and subsystems to the flight control system for anomaly mitigation, failure accommodation, and control re-configuration, based on mission objectives. In Phase I, the research will be focused on a preliminary design of the component-to-system health capability correlation and the anomaly mitigation strategy. In Phase II, the team will conduct a prototype demonstration for a relevant space vehicle as the target application.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Scientific Monitoring, Inc.	Supporting Organization	Industry Minority-Owned Business	Scottsdale, Arizona

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations	
Arizona	California

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Asif Khalak

Technology Areas

Primary:

- TX10 Autonomous Systems
  - TX10.2 Reasoning and Acting
    - TX10.2.6 Fault Response